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PROVISIONAL SPECIFICATION.

Improvements in Apparatus for Treating or Maturing Fluids
Containing Alcohol.

A communication from G. R. BESSER, of 47, Georgenstrasse, Berlin, in the Empire of Germany, Manufacturer.

I, ALFRED JULIUS BOULT, of 111, Hatton Garden, in the County of Middlesex, Chartered Patent Agent, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in that class of apparatus for use in 5 treating fluids containing alcohol in which a cooling coil and electrodes are employed, such for instance as that described in the prior Patent No. 7813 of 1895.

Practical experiments show that if the quantity of oxygen and the molecular vibrations be correctly selected and proportioned, it is possible by means of an alternating current and according to the process described in the patent referred 10 to to remove the slightest traces of fusel oil so that not only the alcohol fluid treated has a different taste but it becomes absolutely free from fusel oil. The correct selection of the quantity of oxygen to be supplied presents no difficulties as the process can be conducted as is well known so that the liquid is at first saturated with oxygen and then the process conducted as described in the patent 15 referred to.

By the action of electricity the impregnated oxygen is caused to combine with the alcohol the oxygen therefore disappearing so to say gradually and if a sample taken shows that there are still traces of fusel oil or that the liquid is capable of further improvement, then the process of impregnating and electrifying is continued 20 or repeated. But it is more difficult to determine the proper amount of the electrical treatment as the cooling of the fluid has to be increased with the increased electrical action.

The cooling coil shown in the drawing accompanying the Specification of Patent No. 7813 of 1895 has for its chief function to maintain the alcohol or other liquid 25 to be treated at a uniformly low temperature while the electricity supplied serves to produce molecular vibrations; but unfortunately the electricity at the same time generates heat therefore the cooling actions must be increased or the cooling surface in the iron cylinder must be increased the greater the quantity of electricity supplied that is to say the greater the surface of the electrodes. As the 30 increase of the surface of the electrodes thus necessitates a greater cooling surface it was found to be difficult to arrange in the receptacle a cooling coil and the electrodes of proper relative dimensions and at the same time not to render the receptacle too unwieldy.

This drawback is avoided in the present invention by utilising the cooling coil 35 itself as one electrode the other one being constituted by the receptacle itself. Thus a proportional increase of the surface of the electrodes with the increase of the cooling coil is automatically obtained and the possibility of the one part interfering with the other is avoided.

[Price 8d.]

Improvements in Apparatus for Treating or Maturing Fluids Containing Alcohol.

The new apparatus differs from that of the prior patent referred to chiefly by the electrodes being omitted while the cooling coil is of correspondingly larger diameter and active surface. One pole of the source of alternating current of electricity is suitably attached to the wall of the receptacle by screwing soldering or otherwise the other wire being directly connected to the cooling coil. A further difference is that the cooling coil is introduced into the receptacle through a guide sleeve or socket by which the coil is electrically insulated from the receptacle. 5

The cooling coil as well as the inner cylinder are preferably coated with a layer or plating of suitable metal which would not affect the taste of the liquid to be treated. Generally tin is sufficient, but for finer products such as cognac *etc.*, a coating of silver is preferable. 10

Dated this 31st day of May 1897.

BOULT & WADE,
Agents for the Applicant.

COMPLETE SPECIFICATION.

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Improvements in Apparatus for Treating or Maturing Fluids Containing Alcohol.

A communication from G. R. BESSER, of 47, Georgenstrasse, Berlin, in the Empire of Germany, Manufacturer.

I, ALFRED JULIUS BOULT, of 111, Hatton Garden, in the County of Middlesex, Chartered Patent Agent, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:— 20

This invention relates to improvements in that class of apparatus for use in treating fluids containing alcohol in which a cooling coil and electrodes are employed such for instance as that described in the prior Patent No. 7813, of 1895. 25

Practical experiments show that, if the quantity of oxygen and the molecular vibrations be correctly selected and proportioned, it is possible by means of alternating current and according to the process described in the patent referred to, to remove the slightest traces of fusel oil so that not only the alcoholic fluid treated has a different taste, but it becomes absolutely free from fusel oil. The correct selection of the quantity of oxygen to be supplied presents no difficulties, as the process can be conducted, as is well known, so that the liquid is at first saturated with oxygen and then the process conducted as described in the patent referred to. 30

By the action of electricity the impregnated oxygen is caused to combine with the alcohol, the oxygen therefore disappearing, so to say, gradually and if a sample taken shows that there are still traces of fusel oil or that the liquid is capable of further improvement, then the process of impregnating and submitting to electric treatment is continued or repeated. But it is more difficult to determine the proper amount of the electrical treatment, as the cooling of the fluid has to be increased with the increased electrical action. 35

The cooling coil, shown in the drawing accompanying the Specification of Patent No. 7813 of 1895 has for its chief function to maintain the alcohol or other liquid to be treated at a uniformly low temperature while the electricity supplied serves to produce molecular vibrations; but unfortunately the electricity at the same time produces heat, therefore the cooling action must be increased or the cooling surface in the cylinder C must be increased, the greater the quantity of electricity supplied, that is to say the greater the surface of the electrodes. As the increase of the sur- 40 45

Improvements in Apparatus for Treating or Maturing Fluids Containing Alcohol.

face of the electricity thus necessitates a greater cooling surface it was found to be difficult to arrange in the receptacle a cooling coil and the electrodes of proper relative dimensions and at the same time not to render the receptacle too unwieldy.

5 This drawback is avoided in the present invention by utilising the cooling coil itself as one electrode, the other electrode being constituted by the receptacle C itself. Thus a proportional increase of the surface of the electrodes with the increase of the cooling coil is automatically obtained and the possibility of the one part interfering with the other is avoided.

10 An apparatus for the application of this process is illustrated in the accompanying drawing.

The new apparatus differs from that of the prior patent referred to chiefly by the special electrodes being omitted, while the cooling coil *b* is of correspondingly larger diameter and active surface. One pole-*e*¹ of the source of alternating current of electricity is suitably attached to the wall of the receptacle C by screwing, 15 soldering, or otherwise, the other wire being connected to the cooling coil *b*. A further difference is that the cooling coil *b* enters the receptacle C through a guide-sleeve or socket by means of which the coil is electrically insulated from the receptacle.

20 The cooling coil as well as the inner cylinder C are preferably coated with a layer or plating of suitable metal which would not affect the taste of the liquid to be treated. Generally tin is sufficient; but for finer products such as cognac *etc.* a coating of silver is preferable.

Having now particularly described and ascertained the nature of this said invention as communicated to me by my foreign correspondent, and in what manner 25 the same is to be performed, I declare that what I claim is:—

In apparatus for treating alcoholic fluids of the character described in the Specification of British Patent No. 7813 of 1895 the employment of the cooling coil as one electrode and the receptacle C insulated from said coil as the other electrode of the alternating current of electricity substantially as and for the purpose 30 described.

Dated this 16th day of February 1898.

BOULT & WADE,
Agents for the Applicant.